

Edward Lawrence Powers, Jr.

December 30, 1915 - August 1, 2005

In Memorium: "It is only needed to say that he was a man ahead of his time, a man who led radiation research in all that he did." Michael G. Simic, Ph.D., D.Sc.; August, 2005

### **A Man of His Time:**

Larry Powers was a man of commitment: to roots, family, science, and large appetites. He grew up in Charleston, South Carolina, during the Great Depression that defined his remarkable work ethic and value for contribution. He graduated from the municipal College of Charleston in 1938 with majors in biology, chemistry, and mathematics. That same year, he married his wife Elly of Charleston, with whom he had seven daughters by the early years of his eras of discovery in 1959. He was awarded an Honorary Doctor of Letters from the College of Charleston in 1974, and retired there with Elly in 1987 as a Professor in Residence. Having obtained his Ph.D. from Johns Hopkins University in genetics and protozoology (1941), and having begun his professional career at the University of Notre Dame (Instructor and Assistant Professor, 1941-1945), Larry was often heard to comment on traditions of excellence in education and football, with adamant priority given to the first but without allowance for failure in the second.

### **The Golden Age of Radiation Science**

The end of World War II had President Truman creating a national laboratory trust for radiation research and applications, which included establishing Argonne National Laboratory (ANL) in 1946 as a primary continuation of matters from the Manhattan Project. In 1946, Austin M. Brues, one of the founders of the Radiation Research Society, hired Larry at ANL, with a starting salary of \$400/month, where in 1950 he became Associate Director of the Division of Biological and Medical Research. In 1951, Larry became a Charter Member of the Radiation Research Society. It is difficult to imagine the excitement combined with purpose associated with radiation science in those years, when the world was acutely aware of a need to know the effects of radiation exposure. Larry's training and interests placed him in position to respond to the multidisciplinary call from the newly founded Radiation Research Society, and he served that call as Treasurer, Secretary-Treasurer, and President without pause from 1951 through 1965. His unswerving sense of value for multidisciplinary research in radiation science led him also to form the Texas Association of Radiation Research (1968-1987) and The Center for Fast Kinetics Research (1975-1995) during his years as Professor of Zoology (1965-1987) at the University of Texas at Austin, where he finished his active career as the first T.S. Painter Centennial Professor in Genetics.

### **The Eras of Discovery**

A series of discoveries, as defined by scientific method, formed a cohesive body of knowledge over time. These discoveries progressed sequentially in association with four principal coworkers, and are identified as eras.

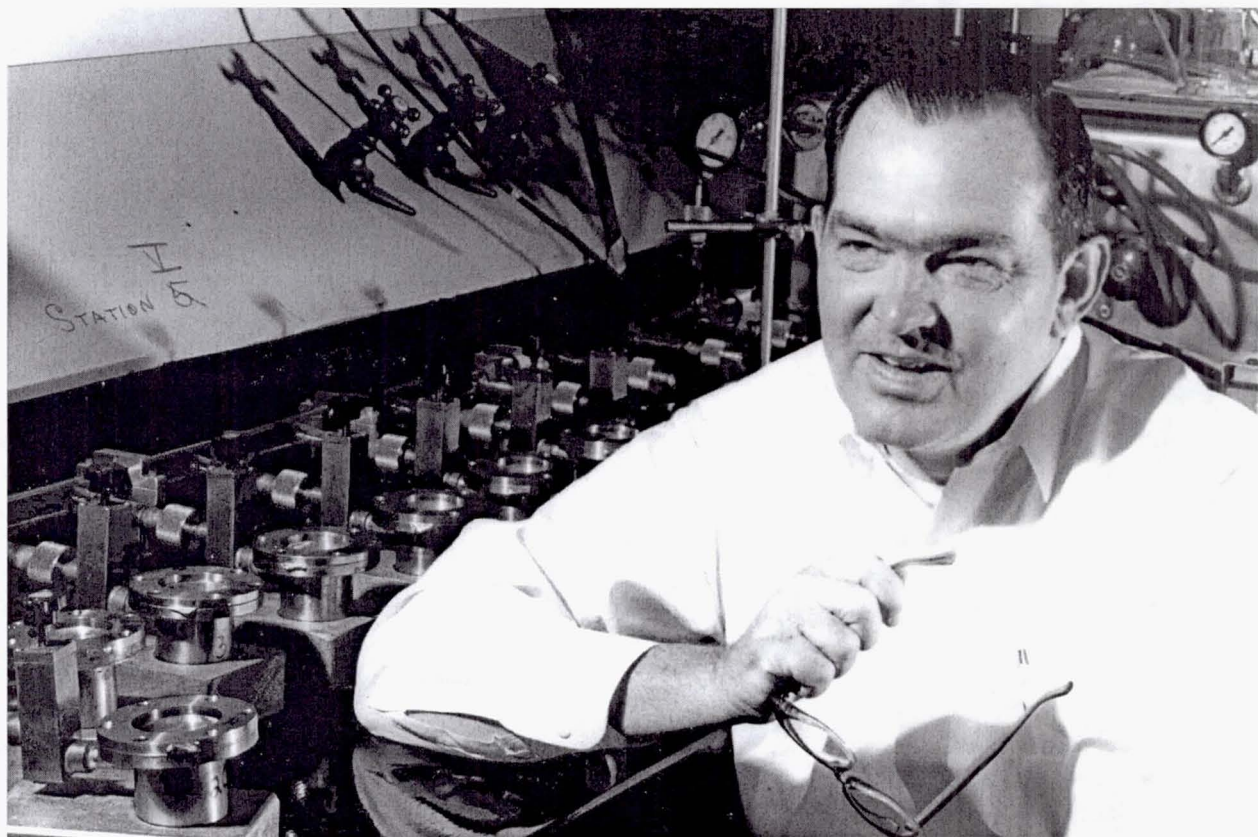
#### **THE CHARLES EHRET ERA -- Physicochemical Compartments**

During 1946-1964 at ANL, early applications of electron microscopy first led to discovery of structures of mitochondria and distributions of cilia in paramecia for the purpose of then separating genetic from cellular compartments of radiation-induced effects. Experimental limitations of that wet system then led Larry to select the endospore of Bacillus megaterium to represent mechanisms of radiation-induced damage generally operating in cells. Two oxygen effects (one immediate and one delayed) were discovered for irradiated dry spores. An algebra was then developed that

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Argonne National Laboratory circa 1961. Larry Powers and one of his pumping stations developed for experimentally discovering physicochemical compartmentalization of radiation effects in bacterial spores dispersed on filters, equilibrated with variable water content, and exposed to various temperatures and gases.

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